

CLAIMS

1 1. A system for self-authenticating a first end-user connected to a common network
2 and a second end-user connected to the common network, the first end-user being a customer
3 of a first service provider of multiple service providers and the second end-user being a
4 customer of a second service provider of multiple service providers, comprising:
5 a digital repository populated with
6 service provider entries including information about the first service provider
7 and other information about the second service provider,
8 end-user entries including information about the first end-user and other
9 information about the second end-user, each of the end-user entries being associated with at
10 least one service provider entry, and
11 service description entries including information about a level of service
12 purchased by an end-user from a service provider, each of the service description entries
13 being associated with an end-user entry;
14 a processor; and
15 a computer readable medium encoded with processor readable instructions that when
16 executed by the processor implement,
17 a new device detection mechanism configured to detect a new device
18 connected to the common network, the new device being associated with one of the first end-
19 user and the second end-user,
20 a bandwidth allocation mechanism configured to allocate limited bandwidth
21 on the common network to the new device and to provide access to an end-user
22 authentication mechanism,

23 the end-user authentication mechanism configured to obtain identification
24 information from the one of the first end-user and the second end-user,
25 a service determination mechanism configured to query the digital repository
26 to determine the level of service purchased by the one of the first end-user and the second
27 end-user from a respective one of the multiple service providers based on information
28 obtained by the end-user authentication mechanism,
29 a service allocation mechanism configured to provide the level of service
30 purchased to the one of the first end-user and the second end-user authenticated by the end-
31 user authentication mechanism.

1 2. The system of Claim 1, wherein the digital repository comprises a database.

1 3. The system of Claim 1, wherein the common network comprises a network
2 dedicated to broadband data transport services.

1 4. The system of Claim 3, wherein the data transport services comprise at least one of
2 Internet access, voice over IP, and video on demand.

1 5. The system of Claim 1, wherein the common network comprises an open access
2 network.

1 6. The system of Claim 1, wherein at least a portion of the common network
2 comprises an Internet protocol network.

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1 7. The system of Claim 1, wherein at least a portion of the common network
2 comprises a hybrid fiber optic coaxial network.

1 8. The system of Claim 1, wherein at least one of the multiple service providers
2 comprises an Internet service provider.

1 9. The system of Claim 1, wherein at least a portion of the common network
2 comprises a Data Over Cable Service Interface Specification network.

1 10. The system of Claim 1, wherein at least a portion of the common network
2 comprises a European Data Over Cable Service Interface Specification network.

1 11. The system of Claim 1, wherein the bandwidth allocation mechanism is further
2 configured to direct an end-user to the end-user authentication mechanism using a wildcard
3 Domain Name System technique to resolve an end-user Domain Name System address
4 resolution request to an IP address of the end-user authentication mechanism.

1 12. The system of Claim 1, wherein the bandwidth allocation mechanism is further
2 configured to use a policy-based routing to direct an end-user to the end-user authentication
3 mechanism.

1 13. The system of Claim 1, wherein the bandwidth allocation mechanism is further
2 configured to use at least one of a Layer Two Tunneling Protocol and policy-based routing to
3 direct an end-user to the end-user authentication mechanism.

14. The system of Claim 1 wherein the bandwidth allocation mechanism is further configured to set IP address filters at an end-user device to block addresses other than an IP address of the end-user authentication mechanism.

15. A method for self-authenticating a first end-user connected to a common network and a second end-user connected to the common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, comprising:

populating a digital repository with

service provider entries including information about the first service provider and other information about the second service provider,

end-user entries including information about the first end-user and other information about the second end-user, each of the end-user entries being associated with at least one service provider entry, and

service description entries including information about a level of service purchased by an end-user, each of the service description entries being associated with an end-user entry;

detecting a new device connected to the common network, the new device being associated with one of the first end-user and the second end-user;

allocating limited bandwidth on the common network to the new device to provide access to an end-user authentication mechanism;

authenticating the one of the first end-user and the second end-user via the end-user authentication mechanism;

20 querying the digital repository to determine the level of service purchased by the one
21 of the first end-user and the second end-user from a respective one of the multiple service
22 providers based on information obtained in the obtaining step; and
23 providing the level of service purchased to the one of the first end-user and the second
24 end-user authenticated in the authenticating step.

1 16. The method of Claim 15, wherein the common network comprises a network
2 dedicated to broadband data transport services.

1 17. The method of Claim 16, wherein the data transport services comprise at least
2 one of Internet access, voice over IP, and video on demand.

1 18. The method of Claim 15, wherein the common network comprises an open access
2 network.

1 19. The method of Claim 15, wherein at least a portion of the common network
2 comprises an Internet protocol network.

1 20. The method of Claim 15, wherein at least a portion of the common network
2 comprises a hybrid fiber optic coaxial network.

1 21. The method of Claim 15, wherein at least one of the multiple service providers
2 comprises an Internet service provider.

1 22. The method of Claim 15, wherein at least a portion of the common network
2 comprises a Data Over Cable Service Interface Specification network.

1 23. The method of Claim 15, wherein at least a portion of the common network
2 comprises a European Data Over Cable Service Interface Specification network.

1 24. A system for self-authenticating a first end-user connected to a common network
2 and a second end-user connected to the common network, the first end-user being a customer
3 of a first service provider of multiple service providers and the second end-user being a
4 customer of a second service provider of multiple service providers, comprising:

5 means for populating a digital repository with

6 service provider entries including information about the first service provider
7 and other information about the second service provider,

8 end-user entries including information about the first end-user and other
9 information about the second end-user, each of the end-user entries being associated with at
10 least one service provider entry, and

11 service description entries including information about a level of service
12 purchased by an end-user, each of the service description entries being associated with an
13 end-user entry;

14 means for detecting a new device connected to the common network, the new device
15 being associated with one of the first end-user and the second end-user;

16 means for allocating limited bandwidth on the common network to the new device
17 and providing access to an end-user authenticating means;

18 means for authenticating the one of the first end-user and the second end;

means for querying the digital repository to determine the level of service purchased by the one of the first end-user and the second end-user from a respective one of the multiple service providers based on information obtained by the means for authenticating; and means for providing the level of service purchased to the one of the first end-user and the second end-user authenticated by the means for authenticating.

25. A computer program product, comprising:

a computer storage medium; and

a computer program code mechanism embedded in the computer storage medium for causing a processor to self-authenticate a first end-user connected to a common network and a second end-user connected to the common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, the computer program code mechanism having,

a first computer code device configured to maintain service provider information, end-user information, and service description information in a database,

the service provider information including information about the first service provider and other information about the second service provider,

the end-user information including information about the first end-user and other information about the second end-user and including an association between each end-user and at least one service providers, and

the service description information including information about a level of service purchased by an end-user, and an association with an end-user;

18 a second computer code device configured to detect a new device connected to the
19 common network, the new device being associated with one of the first end-user and the
20 second end-user;
21 a third computer code device configured to allocate limited bandwidth on the common
22 network to the new device and to provide access to a fourth computer code device;
23 the fourth computer code device configured to authenticate an end-user based on
24 identification information obtained from the one of the first end-user and the second end-
25 user;
26 a fifth computer code device configured to query the database to determine the level
27 of service purchased by the one of the first end-user and the second end-user from a
28 respective one of the multiple service providers based on information obtained by the fourth
29 computer code device; and
30 a sixth computer code device configured to provide the level of service purchased to
31 the one of the first end-user and the second end-user.

1 26. The computer program product of Claim 25, wherein the common network
2 comprises a network dedicated to broadband data transport services.

1 27. The computer program product of Claim 26, wherein the data transport services
2 comprise at least one of Internet access, voice over IP, and video on demand.

1 28. The computer program product of Claim 25, wherein the common network
2 comprises an open access network.

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- 1 29. The computer program product of Claim 25, wherein at least a portion of the
2 common network comprises an Internet protocol network.
- 1 30. The computer program product of Claim 25, wherein at least a portion of the
2 common network as a hybrid fiber optic coaxial network.
- 1 31. The computer program product of Claim 25, wherein at least one of the multiple
2 service providers comprises an Internet service provider.
- 1 32. The computer program product of Claim 25, wherein at least a portion of the
2 common network comprises a Data Over Cable Service Interface Specification network.
- 1 33. The computer program product of Claim 25, wherein at least a portion of the
2 common network comprises a European Data Over Cable Service Interface Specification
3 network.
- 1 34. The computer program product of Claim 25, wherein the third computer code
2 device is further configured to direct an end-user to the end-user authentication mechanism
3 using a wildcard Domain Name System technique to resolve an end-user Domain Name
4 System address resolution request to an IP address of the fourth computer code device.
- 1 35. The computer program product of Claim 25, wherein the third computer code
2 device is further configured to use policy-based routing to direct an end-user to the fourth
3 computer code device.

1 36. The computer program product of Claim 25, wherein the third computer code
2 device is further configured to use at least one of a Layer Two Tunneling Protocol and
3 policy-based routing to direct an end-user to the fourth computer code device.

1 37. The computer program product of Claim 25 wherein the third computer code
2 device is further configured to set IP address filters at an end-user device to block addresses
3 other than an IP address of the fourth computer code device.

1 38. A method for self-authenticating a first end-user connected to a common network
2 and a second end-user connected to the common network, the first end-user being a customer
3 of a first service provider of multiple service providers and the second end-user being a
4 customer of a second service provider of multiple service providers, comprising the steps of:

5 detecting a new device connected to the common network;

6 granting a limited bandwidth on the common network to the new device;

7 authenticating one of the first end-user and the second end-user of the new device
8 through an application accessible over the limited bandwidth;

9 determining a level of service purchased from a respective one of the first service
10 provider and the second service provider by the one of the first end-user and the second end-
11 user identified in the authenticating step; and

12 providing the level of service purchased on the common network to the one of the
13 first end-user and the second end-user.